

Docket No.: 50179-087

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

Robyn Joyce RUSSELL, et al.

Serial No.:

(Divisional of Serial No. 09/068,960)

Group Art Unit:

Filed: February 06, 2001

Examiner:

For: MALATHION CARBOXYLESTERASE

**TRANSMITTAL OF FORMAL DRAWINGS**

Commissioner for Patents

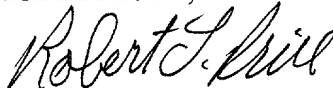
Washington, DC 20231

Sir:

Sixteen (16) sheets of formal drawings are submitted herewith as filed in parent application Serial No. 09/068,960.

Respectfully submitted,

MCDERMOTT, WILL & EMERY



Robert L. Price

Registration No. 22,685

600 13<sup>th</sup> Street, N.W.

Washington, DC 20005-3096

(202) 756-8000 RLP:dtb

**Date: February 6, 2001**

Facsimile: (202) 756-8087

SEQ ID NO:8	M N F N V S L M E K L K W K I K C I E N	20
SEQ ID NO:10	.....	60
SEQ ID NO:7	ATGAATTTC AACGTTAGTTTGATGGAGAAATTTAAATGGAAGATTAAATGCATTGAAAAAT	
SEQ ID NO:1	.....	
SEQ ID NO:3	.....	
SEQ ID NO:5	.....	
SEQ ID NO:9	.....	
Lc743		
RM8con		
SEQ ID NO:1	K E L N Y R L T T N E T V V A E T E Y G	40
SEQ ID NO:3	.....	120
SEQ ID NO:5	AAGTTTAAACTATCGTTTAACTACCAATGAAACGGTGGTAGCTGAAACTGAATATGGC	
SEQ ID NO:9	.....	
Lc743		
RM8A	.....	
RM8B	.....	
RM8C	.....	
RM8con	.....	
Lc743		
RM8con		
SEQ ID NO:1	K V K G V K R L T V Y D D S Y Y S F E G	60
SEQ ID NO:3	.....	120
SEQ ID NO:5	AAAGTGAAAGGCGTTAAACGTTTAACTGTACGATGATTCCTACTACAGTTTGGAGGT	
SEQ ID NO:9	.....	
Lc743		
RM8A	.....	
RM8B	.....	
RM8C	.....	
RM8con	.....	
Lc743		
RM8con		
SEQ ID NO:1	I P Y A Q P P V G E L R F K A P Q R P T	80
SEQ ID NO:3	.....	240
SEQ ID NO:5	ATACCGTAGCCCCAACCGCCAGTGGGTGAGCTGAGATTAAACGACCCGACGACCAACA	
SEQ ID NO:9	.....	
Lc743		
RM8A	.....	
RM8B	.....	
RM8C	.....	
RM8con	.....	

Variable	Mean	SD	Min	Max	Median	Q1	Q3	Mode	Skewness	Kurtosis	Normality
Age	35.2	12.5	18	65	32	28	38	35	0.15	3.2	0.95
Gender	1.2	0.4	1	2	1	1	1	1	0.05	2.8	0.98
Education	12.5	2.1	9	16	12	11	13	12	0.10	3.5	0.92
Income	4500	1500	2000	8000	4000	3500	5000	4500	0.12	3.1	0.96
Marital Status	1.5	0.5	1	2	1	1	1	1	0.08	2.9	0.97
Occupation	2.5	0.8	1	4	2	2	3	2	0.18	3.3	0.94
Health Status	1.8	0.6	1	3	1	1	2	1	0.06	2.7	0.99
Stress Level	3.2	1.1	1	5	3	2	4	3	0.20	3.6	0.91
Life Satisfaction	4.5	0.9	3	5	4	4	4	4	0.04	2.6	0.99
Resilience	2.8	0.7	1	4	2	2	3	2	0.16	3.4	0.93
Optimism	3.8	0.8	2	5	3	3	4	3	0.09	3.0	0.97
Emotional Stability	2.2	0.6	1	4	2	2	3	2	0.14	3.2	0.95
Self-Esteem	3.5	0.9	2	5	3	3	4	3	0.07	2.9	0.98
Life Satisfaction	4.5	0.9	3	5	4	4	4	4	0.04	2.6	0.99
Resilience	2.8	0.7	1	4	2	2	3	2	0.16	3.4	0.93
Optimism	3.8	0.8	2	5	3	3	4	3	0.09	3.0	0.97
Emotional Stability	2.2	0.6	1	4	2	2	3	2	0.14	3.2	0.95
Self-Esteem	3.5	0.9	2	5	3	3	4	3	0.07	2.9	0.98

Lc743	P W D G V R D C C N H K D K S V Q V D F	100
Rm8con	- - - - + - - - + - - - + - - - + - - - + - - - + - - - +	241
Lc743	CCCTGGGATGGTGCCTGATTGTTCGAATCATAAAGATAAAGTCAGTGCAAGTTGATTTT	300
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	
Lc743	I T G K V C G S E D C L Y L S V Y T N N	120
Rm8con	- - - - + - - - + - - - + - - - + - - - + - - - + - - - +	301
Lc743	ATAACGGGCAAAGTGTGGCTCAGAGGATTGCTATACCTAAGTGCTATACGAATAAT	360
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	
Lc743	L N P E T K R P V L V Y I H G G G F I I	140
Rm8con	- - - - + - - - + - - - + - - - + - - - + - - - + - - - +	361
Lc743	CTAAATCCCGAAACTAAACGTCCTCCGTTTAGTATACATACATGTTGGTGGTTTTATTATC	420
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	
Lc743	G E N H R D M Y G P D Y F I K K D V V	160
Rm8con	- - - - + - - - + - - - + - - - + - - - + - - - + - - - +	421
Lc743	GGTGAAAATCATCGTGATATGTATGGTCCTGATTATTTTCATTA AAAAGGATGTGGTGTG	480
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	

FIG. 1B.

Lc743	I N I Q Y R L G A L G F L S L N S E D L	180
Rm8con	. . . . + - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +	540
Lc743	ATTAACATACAATATCGTTTGGAGCTCTAGGTTTCTAAGTTTAAATTTCAGAAGACCTT	
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	
Lc743	N V P G N A G L K D Q V M A L R W I K N	200
Rm8con	. . . . + - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +	600
Lc743	AATGTGCCGGTAATGCCGGCCTTAAAGATCAAAGTCATGGCCTTGCGTTGGATTAAAAAT	
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	
Lc743	N C A N F G G N P D N I T V F G E S A G	220
Rm8con	. . . . + - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +	660
Lc743	AATTGGCCAACTTTGGTGGCAATCCCAGATAATATTACAGTCTTTGGTGAAGTGCCGGT	
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	
Lc743	A A S T H U M M L T E Q T R G L F H R G	240
Rm8con	. . . . + - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +	720
Lc743	GCTGCCTCTACCCACTACATGATGTTAACCGAACAAACTCGCGGTCTTTCCATCGTGTT	
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	

[illegible]

FIG. 1D.

Lc743	A	D	C	V	L	P	K	H	P	R	E	M	V	K	T	A	W	G	N	S	340	
Rm8con	.	.	.	.	.	.	.	.	.	.	L	.	.	.	.	.	.	.	.	.	961	
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Lc743	G	C	T	G	T	T	A	C	C	A	A	C	A	T	C	T	C	G	G	A	A	1020
Rm8A	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8B	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8C	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8con	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
	G	C	T	G	A	T	T	A	C	C	A	A	C	A	T	C	T	C	G	G	A	1020
Rm8A	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8B	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8C	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8con	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
	G	C	T	G	A	T	T	A	C	C	A	A	C	A	T	C	T	C	G	G	A	1020
Rm8A	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8B	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8C	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8con	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
	G	C	T	G	A	T	T	A	C	C	A	A	C	A	T	C	T	C	G	G	A	1020
Rm8A	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8B	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8C	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8con	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
	G	C	T	G	A	T	T	A	C	C	A	A	C	A	T	C	T	C	G	G	A	1020
Rm8A	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8B	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8C	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8con	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
	G	C	T	G	A	T	T	A	C	C	A	A	C	A	T	C	T	C	G	G	A	1020
Rm8A	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8B	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8C	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8con	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
	G	C	T	G	A	T	T	A	C	C	A	A	C	A	T	C	T	C	G	G	A	1020
Rm8A	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8B	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8C	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
Rm8con	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	
	G	C	T	G	A	T	T	A	C	C	A	A	C	A	T	C	T	C	G	G		

[illegible][illegible][illegible]

THE

Lc743	H V T G E T P T A D N F M D L C S H I Y
Rm8con	-+-----++-----++-----++-----+
1201	CATGTTACAGGAGAAACACCACAGCTGATAATTTATGGATCCTTGCTCTCACATCTAT
Lc743	. . . . .
Rm8A	. . . . .
Rm8B	. . . . .
Rm8C	. . . . .
Rm8con	. . . . .
Lc743	F W F P M H R L L Q L L R F N H T S G T P
Rm8con	. . . . .
1261	TTCGTGCCCATGCATCGTTTGTGCAATTACGTTTCAATCACACCTCCGGTACACCC
Lc743	. . . . .
Rm8A	. . . . .
Rm8B	. . . . .
Rm8C	. . . . .
Rm8con	. . . . .
Lc743	V Y L Y R F D F D S E D L I N P Y R I M
Rm8con	-+-----++-----++-----++-----+
1321	GTCCTACTGTATCGCTTCGACTTTGATTCGGAAGATCTTATTAATCCCCTATCGTATTATG
Lc743	. . . . .
Rm8A	. . . . .
Rm8B	. . . . .
Rm8C	. . . . .
Rm8con	. . . . .
Lc743	R S G R G V K G V S H A D E L T Y F F W
Rm8con	-+-----++-----++-----++-----+
1381	CGTAGTGGACGTGGTGTTAAGGGTGTTAGTCATGCTGATGAATTAACCTATTTCTTCTG
Lc743	. . . . .
Rm8A	. . . . .
Rm8B	. . . . .
Rm8C	. . . . .
Rm8con	. . . . .

•  
H  
I  
T  
H

Lc743	N Q L A K R M P K E S R E Y K T I E R M	500
Rm8con	- - - + - - - + - - - + - - - + - - - + - - - +	1500
1441	AATCAATTGGCCAAACGTATGCCTAAAGAATCGCGTGAATACAAACAATTGAAACGTATG	
Lc743	. . . . .	
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	
Lc743	T G I W I Q F A T T G N P Y S N E I E G	520
Rm8con	- - - + - - - + - - - + - - - + - - - + - - - +	1560
1501	ACTGGTATATGGATACAAATTGCCACCACCTGGTAATCCTTAGCAATGAAATTGAAAGGT	
Lc743	. . . . .	
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	
Lc743	M E N V S W D P I K K S D E V Y K C L N	540
Rm8con	- - - + - - - + - - - + - - - + - - - + - - - +	1620
1561	ATGGAATAATGTTTCCTGGGATCCAATTAAAGAAATCCGACGAAGTATACAAAGTGTTTGAAT	
Lc743	. . . . .	
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	
Lc743	I S D E L K M I D V P E M D K I K Q W E	560
Rm8con	- - - + - - - + - - - + - - - + - - - + - - - +	1680
1621	ATTAGTGACGCAATTGAAAATGATTGATGTGCCTGAAATGGATAAGATTAAACAATGGGAA	
Lc743	. . . . .	
Rm8A	. . . . .	
Rm8B	. . . . .	
Rm8C	. . . . .	
Rm8con	. . . . .	







FIG. 2B

```
SEQ ID NO:14
1  ATGACTTTTCTGAAGCAATTCAATATTTCGCCCTGAAACTATGCTTTAAATGCATGGTCAAT 60
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   TACTGAAAAGACTTCGTTAAGTATAAAGCGGACTTTGATACGAAATTTACGTACCAGTTA
   M T F L L K Q F I F R L K L C F K C M V N -

SEQ ID NO:13
61  AAATACACAAACTACCGTCTGAGTACAAATGAAACCCAAATAATCGATACTGAATATGGA 120
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   TTTATGTGTTTGATGGCAGACTCATGTTTACTTTGGGTTTATTAGCTATGACTTATACCT
   K Y T N Y R L S T N E T Q I I D T E Y G -

121  CAAATTAAGGGTGTAAAGCGAATGACCGTCTACGATGATTCTTACTACAGTTTCGAGAGT 180
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   GTTAAATTTCCCAATTCGCTTACTGGCAGATGCTACTAAGAATGATGTCAAAGCTCTCA
   Q I K G V K R M T V Y D S Y Y S F E S -

181  ATACCCATATGCTAAGCCTCCAGTGGGTGAGTTGAGATTCAAGGCACCCAGCGGCTGTA 240
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   TATGGGATACGATTTCGGAGGTCAACCCACTCAACTCTAAGTTCGGTGGGTGCGCCGGACAT
   I P Y A K P P V G E L R F K A P Q R P V -

241  CCATGGAGGGGTGTACGTGATTGCTGTGGGCCAGCCAACAGATCGGTACAGACAGATTTC 300
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   GGTACCCCTCCACATGCACATAACGACACCCCGGTCTGTCTAGCCATGTCTGTCTAAAG
   P W E G V R D C C G P A N R S V Q T D F -

301  ATAAGTGGCAAACCCACAGGTTTCGGAGGATTGTCTATACCTGAATGTGTATACCAATGAC 360
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   TATTCACCGTTTGGGTGTCCCAAGCCTCCTAACAGATATGGACTTACACATATGGTTACTG
   I S G K P T G S E D C L Y L N V Y T N D -
```

FIG. 3A

361 TTGAACCCAGACAAAAAGCGTCTCTGTTATGTTTTCATCCATGGCGGAGATTTTATTTTC  
-----+-----+-----+-----+-----+-----+-----+  
AACTTGGGTCTGTTTCCGCAGGACAATACCAAAAGTAGGTACCGCCTCTAAAAATAAAAG  
L N P D K R R P V M V F I H G G D F I F -  
420  
421 GGCGAAGCAAAATCGTAACCTGGTTTGGTCCCAGCTACTTTATGAAGAAACCCGTGGTCTTG  
-----+-----+-----+-----+-----+-----+-----+  
CCGCTTCGTTTAGCATTGACCAACCAAGGCTGATGAAATACTTCTTTGGGCACCCAGAAC  
G E A N R N W F G P D Y F M K K P V V L -  
481 GTAACCGTGCAATATCGTTTGGGTGTGTTGGGTTTCCCTTAGCCTGAAATCGGAAAATCTC  
-----+-----+-----+-----+-----+-----+-----+  
CATTGGCAGCTTATAGCAAAACCCACACAAACCCAAAGGAATCGGACTTTAGCCTTTTAGAG  
V T V Q Y R L G V L G F L S L K S E N L -  
541 AATGTCCCGGCAACGCTGGCCTCAAGGATCAAGTAATGGCCTTGAGATGGGTCAAGAGT  
-----+-----+-----+-----+-----+-----+-----+  
TTACAGGGGCCGTTGCGACCGGAGTTCCTAGTTCATTACCGGAACCTCTACCCAGTTCTCA  
N V P G N A G L K D Q V M A L R W V K S -  
601 AATATTGCCATTTTCGGTGGCGATGTAGACAAATATTACCGTCTTCGGCGGAAAGTGTGGT  
-----+-----+-----+-----+-----+-----+-----+  
TTATAACGGTAAAAGCCACCGCTACATCTGTATAATGGCAGAAGCCGCTTTCACGACCA  
N I A I F G G D V D N I T V F G E S A G -  
661 GGGGCTCAACCCATTACATGATGATAACCGAACAGACCCGTGGTTTATTCATCGTGGT  
-----+-----+-----+-----+-----+-----+-----+  
CCCCGGAGTTGGGTAATGTACTACTATTGGCTTGTCTGGGCACCAAAATAAGGTAGCACCA  
G A S T H Y M M I T E Q T R G L F H R G -  
720

FIG. 3B

```

721 ATCATGATGTCCGGTAATTCCATGTGCTCATGGCCCTCTACAGAATGCCAAAGTCGTGCG 780
-----+-----+-----+-----+-----+-----+-----+
TAGTACTACAGGCCATTAAAGGTACACGAGTACCCGGAGATGTCTTACGGTTTCAGCACGC
I M S G N S M C S W A S T E C Q S R A -

781 CTCACCATGGCCAAACGTGTTGGCTATAAGGGAGAGGACAAATGAAAAGATATCCTGGAA 840
-----+-----+-----+-----+-----+-----+-----+
GAGTGGTACCGGTTTGCACAACCGATATTCCTCTCCTGTTACTTTTCTATAGGACCTT
L T M A K R V G Y K G E D N E K D I L E -

841 TTCCTAATGAAAGCCCAATCCCTATGATTTTGATCAAAAGAGGAGCCACAAAGTTTGCACACC 900
-----+-----+-----+-----+-----+-----+-----+
AAGGATTACTTTCGGTTAGGGATACTAACTAGTTTCTCCTCGGTGTTCAAAACTGTGGG
F L M K A N P Y D L I K E E P Q V L T P -

901 GAAAGAAATGCAAAATAAGGTCATGTTTCCTTTTGGACCCCACTGTAGAACCATACCAGACA 960
-----+-----+-----+-----+-----+-----+-----+
CTTCTTACGTTTATCCAGTACAAAGGAAACCTGGTGACATCTTGGTATGGTCTGT
E R M Q N K V M F P F G P T V E P Y Q T -

961 GCCGACTGTGTGTACCCAAACCAATCAGAGAAATGGTGAAGAGCGCCTGGGGAAATTCG 1020
-----+-----+-----+-----+-----+-----+-----+
CGGCTGACACACCATGGGTTTGGTTAGTCTCTTTACCACCTTCTCGCGGACCCCTTTAAGC
A D C V V P K P I R E M V K S A W G N S -

1021 ATACCCACATTGATAGGCAATACCTCCTACGAAGTTTGTCTTCCAAATCAATTGCCAAA 1080
-----+-----+-----+-----+-----+-----+-----+
TATGGGTGTAACACTATCCGTTATGGAGGATGCTTCCAAACGAAAGTTTAGTTAACGGTTT
I P T L I G N T S Y E G L L S K S I A K -

```

FIG. 3C

1081 CAATATCCGGAGGTTGTAAAAGAGTTGGAATCCTGTGTGAATTATGTGCCCTTGGAGTTG 1140  
 -----+-----+-----+-----+-----+-----+-----+-----+  
 GTTATAGCCTCCAACATTTTCTCAACCTTAGGACACACTTAATACACGGAACCCCTCAAC  
 Q Y P E V V K E L E S C V N Y V P W E L -  
 1141 GCTGACAGTGAACGCAGTGCCCCCGGAAACCCCTGGAGAGGGCTGCCATTGTGAAAAAGGCC 1200  
 -----+-----+-----+-----+-----+-----+-----+-----+  
 CGACTGTCACCTTGCGTCACGGGGCCCTTTGGGACCTCTCCCGACGGTAACACTTTTTCGGG  
 A D S E R S A P E T L E R A A I V K K A -  
 1201 CATGTGGATGGGAAACACCTACTCTGGATAATTTTATGGAGCTTTGCTCCTATTTCTAT 1260  
 -----+-----+-----+-----+-----+-----+-----+-----+  
 GTACACCTACCCCTTTGTGGATGAGACCTATTAAATACCTCGAAACGAGGATAAAGATA  
 H V D G E T P T L D N F M E L C S Y F Y -  
 1261 TTCCTCTTCCCATGCATCGCTTCCACAAATGCGCTTCAACCAACACAGCTGGCACTCCC 1320  
 -----+-----+-----+-----+-----+-----+-----+-----+  
 AAGGAGAAGGGGTACGTAGCGAAGGATGTTAACGCGAAGTTGGTGTGTCGACCGTGAGGG  
 F L F P M H R F L Q L R F N H T A G T P -  
 1321 ATTTATTGTATCGTTTCGATTTCCGATTCGGAAGAAATTTAATTAACCCCTATCGTATTATG 1380  
 -----+-----+-----+-----+-----+-----+-----+-----+  
 TAAATAACATAGCAAAGCTAAAGCTAAGGCTTCTTTAATAATTGGGATAGCATAATAC  
 I Y L Y R F D F D S E E I I N P Y R I M -  
 1381 CGTTTGGCCGTGGCGTTAAAGGTAAAGCCATGCCGATGAGCTAACCTATCTCTCTGG 1440  
 -----+-----+-----+-----+-----+-----+-----+-----+  
 GCAAAACCGGCACCGCAATTTCACATTCGGTACGGCTACTCGATTGGATAGAGAAGACC  
 R F G R G V K G V S H A D E L T Y L F W -

FIG. 3D

AACATTTTGTGGAACGCCTGCCAAAGGAAAGCCGGGAATACAAAACCATTTGAACGCATG  
 -----+-----+-----+-----+-----+-----+-----+  
 1441 TTGTAACACAGCTTTGCGGACGGTTTCCTTTCCGGCGCTTATGTTTGGTAACTTGGGTAC  
 -----+-----+-----+-----+-----+-----+-----+  
 N I L S K R L P K E S R E Y K T I E R M -  
 GTTGGCATTTGGACGGAATTCCGCCACCACCGGCAACCATACAGCAATGATAGCCGGC  
 -----+-----+-----+-----+-----+-----+-----+  
 1501 CAACCGTAAACCTGCCTTAAGCGGTGGTGGCCGTTTGGTATGTCGTTACTATATCGGCCG  
 -----+-----+-----+-----+-----+-----+-----+  
 V G I W T E F A T T G K P Y S N D I A G -  
 ATGGAACACCTCACCTGGGATCCCATAAAAAATCCGATGATGCTATAAAATGTTAAAT  
 -----+-----+-----+-----+-----+-----+-----+  
 1561 TACCTTTGGAGTGGACCCCTAGGGTATTTTTTAGGCTACTACAGATATTTACAAATTTA  
 -----+-----+-----+-----+-----+-----+-----+  
 M E N L T W D P I K K S D D V Y K C L N -  
 ATCGGCGATGAATTGAAAGTTATGATTTGCCAGAAATGGATAAAATTAACAATGGGCA  
 -----+-----+-----+-----+-----+-----+-----+  
 1621 TAGCCGCTACTTAACCTTCAATACCTAAACGGTCTTTACCTATTTTAAATTTGTACCCGT  
 -----+-----+-----+-----+-----+-----+-----+  
 I G D E L K V M D L P E M D K I K Q W A -  
 AGTATATTCGATAAAAAGGAAGGAATTGTTT 1710  
 -----+-----+-----+-----+-----+-----+-----+  
 1681 TCATATAAGCTATTTTCTTCCTTAACAAA  
 -----+-----+-----+-----+-----+-----+-----+  
 S I F D K K K E L F

FIG. 3E



SEQ ID	NO:15	MdαE7	97	QTDFISGKPTGSEDCLYLNVTNDLNPDKKRPVMVFTHGGGFIFGEANRN	146
SEQ ID	NO:43	LcαE7	97	QVDFITGKVCSEDCLYLSVYTNNLNPETKRPVLVIHGGGFIIGENHRD	146
			147	WYGPDIYFMKKPVLVTVQYRLGLVGLSLKSENLVPGNAGLKDQVMALR	196
			147	MYGPDYFIKKDVVLINIQYRLGALGFLSLNSEDNLVPGNAGLKDQVMALR	196
			197	WFKSNIAIFGGDVDNITVFGESAGGASTHYMMITEQTRGLFHRGIMMSGN	246
			197	WIKNNCANFGGNPDNITVFGESAGAASTHYMMLTEQTRGLFHRGILMSGN	246
			247	SMCSSASTEÇQSRALTMAKṚVGYKGEENEḲDILEFLMKANPYDLIKEEPQ̣	296
			247	AICPLANTQCQHRAFTLAKLAGYKGEDNDḲDVLEFLMKAKPQDLIKLEEḲ	296
			297	VLTPERM	303
			297	VLTLER	303

4.  
G  
H  
E